

AMENDMENTS TO CLAIMS

1. Cancelled.
2. Cancelled.
3. (Currently amended) The method of Claim 4 ~~+~~ 5 wherein said substrate is treated to change its surface tension.
4. (Currently amended) The method of Claim 4 ~~+~~ 5 wherein said substrate is selected from the group consisting of glass, ceramic, and plastic.
5. (Currently Amended) ~~The method of Claim 1~~ A method for the deposition of an ink jet printable composition, to a substrate comprising: depositing an ink composition on a substrate by ink jet printing;
wherein said composition comprises:
(a) conductive functional material;
(b) organic polymer comprising polyvinylpyrrolidone; wherein said organic polymer is present in the range of 1-10 wt.%, based on total composition dispersed in
(c) dispersion vehicle selected from organic solvent, water, or mixtures thereof; and wherein the viscosity of said composition is between 5 mPa.s to 50 mPa.s at a temperature of 25 to 35°C wherein the conductive functional material has an average particle size (D50) of 0.1 to 1.2 microns, wherein the D100 is not larger than 5 micron; and wherein said composition maintains stability for 24 hours;
(d) firing said ink jet printable composition and substrate
wherein said composition further comprises a monomer, wherein said monomer is ultraviolet curable or thermally curable wherein said composition further comprises up to 10 wt% inorganic resinate.
6. (Original) The method of Claim 5 wherein said inorganic resinate is silver resinate or a mixture of metal resinsates.

7. Cancelled.

8. (Currently amended) The method of Claim 4 5 wherein said composition is comprised of other polymers selected from the group consisting of polymethacrylates and polyacrylates.

9. Cancelled.

10. (Currently amended) The composition of Claim 4 5 wherein said monomer is selected from the group consisting of triethylolpropane ethoxy triacrylate, trimethylolpropane triacrylate, pentaerythritol triacrylate, pentaerythritol trimethacrylate, trimethylolpropane trimethacrylate, pentaerythritol tetraacrylate, pentaerythritol tetramethacrylate, triethylene glycol diacrylate, triethylene glycol dimethacrylate, polyoxyethylated trimethylolpropane triacrylate, ethylated pentaerythritol triacrylate, dipentaerythritol monohydroxypentaacrylate and 1,10-decanediol dimethacrylate.

11. (Currently amended) The method of Claim 4 5 wherein said conductive functional material is present in the range of 1-60 wt.%, based on total composition.

12. Cancelled.

13. (Currently amended) The method of Claim 4 5 wherein said dispersion vehicle is present in the range of 40-95 wt.%, based on total composition.

14. (Currently amended) The method of Claim 4 5 further comprising a photoinitiator ~~photoinitiator~~.

15. (Currently amended) The method of Claim 4 5 wherein said organic solvent is selected from the group consisting of aliphatic alcohols, esters of aliphatic alcohols, terpenes, ethylene glycol, esters of ethylene glycol, carbitol esters and mixtures thereof.

16. (Previously submitted) The method of Claim 11 wherein the conductive functional material is present in amounts of 15%-60%.

17. Cancelled

18. (Currently amended) ~~The method of Claim 1~~ A method for the deposition of an ink jet printable composition, to a substrate comprising: depositing an ink composition on a substrate by ink jet printing;

wherein said composition comprises:

(a) conductive functional material;

(b) organic polymer comprising polyvinylpyrrolidone; wherein said organic polymer is present in the range of 1-10 wt.%, based on total composition dispersed in

(c) dispersion vehicle selected from organic solvent, water, or mixtures thereof; and wherein the viscosity of said composition is between 5 mPa.s to 50 mPa.s at a temperature of 25 to 35°C wherein the conductive functional material has an average particle size (D50) of 0.1 to 1.2 microns, wherein the D100 is not larger than 5 micron ; and wherein said composition maintains stability for 24 hours;

(d) firing said ink jet printable composition and substrate
wherein said composition further comprises a monomer, wherein said monomer is ultraviolet curable or thermally curable wherein the conductive functional material is selected from the group consisting of gold, silver, copper, nickel, aluminum, platinum, palladium, molybdenum, tungsten, tantalum, tin, inum, tungsten, tantalum, tin, indium, lanthanum, gadolinium, ruthenium, cobalt, titanium, yttrium, europium, gallium, zinc, magnesium, barium, cerium, strontium, lead, antimony, and combinations thereof.

19. (Previously submitted) A method for the deposition of an ink jet printable composition, to a substrate comprising: depositing an ink composition on a substrate by ink jet printing;

wherein said composition comprises:

(a) conductive functional material wherein said conductive functional material is present in the range of 1-60 wt.%, based on total composition and wherein the conductive

functional material is selected from the group consisting of gold, silver, copper, nickel, aluminum, platinum, palladium, molybdenum, tungsten, tantalum, tin, inum, tungsten, tantalum, tin, indium, lanthanum, gadolinium, ruthenium, cobalt, titanium,

yttrium, europium, gallium, zinc, magnesium, barium, cerium, strontium, lead, antimony, and combinations thereof;

(b) organic polymer comprising polyvinylpyrrolidone wherein said organic polymer is present in the range of 1-10 wt.%, based on total composition; dispersed in

(c) dispersion vehicle selected from organic solvent, water, or mixtures thereof; and wherein the viscosity of said composition is between 5 mPa.s to 50 mPa.s at a temperature of 25 to 35°C wherein the conductive functional material has an average particle size (D50) of 0.1 to 1.2 microns, wherein the D100 is not larger than 5 micron; and wherein said composition maintains stability for 24 hours;

(d) firing said ink jet printable composition and substrate wherein said composition further comprises a monomer, wherein said monomer is ultraviolet curable or thermally curable; an

(e) wherein the substrate is treated to change its surface tension prior to depositing the ink composition; and

(f) wherein the substrate is selected from the group consisting of glass, ceramic, and plastic.